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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,048	09/26/2001	Tetsuya Yamaguchi	44471-264230 (13700)	1387

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EXAMINER

WHITMORE, STACY

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/964,048

Applicant(s)

YAMAGUCHI, TETSUYA

Examiner

Stacy A Whitmore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1, 3, 9, 11, and 13 are objected to because of the following informalities:

I. As for claims 1, 9, and 11, the preamble of the claims has grammatical errors with reference to the "for circuit characteristic of semiconductor device".

II. As for claims 3 and 13, the symbol used for standard deviation should be put in parentheses.

III. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

I. As for claim 1, line 2; claim 9, lines 4-5,; and claim 11, lines 2-3, the phrase "fluctuating most of a characteristic" is unclear. The phrase appears to be a first characteristic value that fluctuates the most of other characteristics related to an element or a value fluctuating related to one characteristic of an element. Clarify

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II. As for claim 1, lines 4 and 8, it is unclear which fluctuation is being referred to. Clarify.

III. As for claim 9, lines 7 and 10 recite the limitation "the characteristic" and the circuit characteristic", respectively. It is unclear what characteristic is being referred to. Clarify.

IV. As for claim 11, lines 4 and 10, the term "the parameter is unclear because it is not clear which parameter is being referred to. Clarify.

VI. Claim 1 recites the limitation "the element" in lines 3 and 5. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Vlach (US Patent 5,548,539).

4. As for claim 1, Vlach '539 disclosed the invention as claimed, including a simulation method for circuit characteristic of a semiconductor device, comprising:

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obtaining a first characteristic value fluctuating most of a characteristic of an element composing the semiconductor device according to a fluctuation of a parameter of the element [col. 10, lines 1-30];

determining a width of the fluctuation of the parameter matching a second characteristic value of the worst case of the characteristic of the element with the first characteristic value [col. 10, lines 1-30]; and

determining a third characteristic value of the worst case of the circuit characteristic of the semiconductor device based on the width of the fluctuation [col. 10, lines 1-30].

5. As for claim 2, Vlach '539 disclosed wherein said obtaining the first characteristic value comprises:

inputting a frequency distribution of the fluctuation of the parameter; and

obtaining the first characteristic value using the fluctuation according to Monte Carlo analysis [see col. 10, especially statistical distributions].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 5-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vlach (US Patent 5,548,539 in view of Krivokapic (US Patent 6,304,836).

7. As for claims 5, 6, and 8, Vlach disclosed the method substantially as claimed, including the method of simulation for circuit characteristic as cited in the rejections of claims 1 and 2 above.

Vlach did not specifically disclose an FET or parameters of one of gate length and gate oxide film thickness or one of drive current or threshold voltage, or circuit characteristics of one of access time, propagation delay time, frequency and power consumption.

Krivokapic '836 disclosed an FET or parameters of one of gate length and gate oxide film thickness or one of drive current or threshold voltage, or circuit characteristics of one of access time, propagation delay time, frequency and power consumption [col.'s 7-8, and tables on col.'s 9 and 10].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Vlach '539 and Krivokapic '836 because both Vlach and Krivokapic '836 disclosed the simulation of circuit characteristics involving transistors. Adding Krivokapic '836 FET or parameters of one of gate length and gate oxide film thickness or one of drive current or threshold voltage, or circuit characteristics of one of access time, propagation delay time, frequency and power consumption would

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have improved Vlach method by providing for the simulation of FET device parameters which are normally used to determine device operating characteristics.

8. Claims 5-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vlach (US Patent 5,548,539 in view of Tatsumi (US Patent 5,886,906).

9. As for claims 5 and 7, Vlach disclosed the method substantially as claimed, including the method of simulation for circuit characteristic as cited in the rejections of claims 1 and 2 above.

Vlach did not specifically disclose an FET or drive current or threshold voltage

Tatsumi '906 disclosed an FET and parameters of gate length and gate oxide film thickness, and drive current or threshold voltage [col. 4].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Vlach '539 and Tatsumi '906 because both Vlach and Tatsumi disclosed the simulation of circuit characteristics involving transistors. Adding Tatsumi's FET and parameters of drive current or threshold voltage would have improved Vlach method by providing for the simulation of FET device characteristics which are normally needed to determine circuit performance of FET devices [see Tatsumi; col. 4].

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Claims 9 and 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 3-4, 10, and 12-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stacy A Whitmore whose telephone number is (703) 305-0565. The examiner can normally be reached on Monday-Thursday, alternate Friday 6:30am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Stacy A Whitmore  
Patent Examiner  
Art Unit 2812



SAW